REMARKS

The above amendment and these remarks are responsive to the Office Action of 13 Nov 2006 by Examiner Johnna Ronee Loftis.

Claims 1, 3-15, and 19-32 are in the case, none as yet allowed.

35 U.S.C. 101

Claims 1, 3-15, and 19-32 have been rejected under 35 U.S.C. 101 as directed to non-statutory subject matter.

Examiner asserts that the claimed invention is directed to non-statutory subject matter as "...not concrete since the claimed complexity factor is not fully described so that one of ordinary skill in the art would know how to determine the complexity factor..." [Office Action, pages 3-4.]

Applicants traverse.

Further, with respect to claim 8, the Examiner asserts that "...the step of determining salvageable and disposable content is also not described in such a way that one skilled in the art would be able to make the determination. Specifically, there are no set guidelines for determining what characteristics make some material content salvageable and some material content disposable. As disclosed, the method of determining salvageable or disposable contents is completely subjective since depending on who is making the determination; the same part or item could be deemed as salvageable or disposable." [Office Action, page 4.]

Applicants traverse.

Applicants discuss hereafter both of these issues.

Determination of Complexity Factor

With respect to complexity factor, applicants assert that the specification supports the definition provided in

the claims: the "complexity factor representing processing time divided by said volume".

Applicants invention relates to processing of truck loads of electronic equipment of various complexities as that relates to demanufacturing. Those of ordinary skill in the art will readily understand that a lap top is less complex than a desk top, which is less complex than an IBM AS 400, which is less complex than an ABM System/360. They will recognize that it is within the skill of the art to determine that one type of equipment is more complex than another.

Careful precision is not required, but even at this gross level the complexity factor (defined as the work content multiplier [Specification, page 8, line 2]) is important and useful in the determination of staffing requirements.

Complexity level is related to the time it takes for an experience operator to tear down a particular piece of equipment to a point where the resulting components are reasonable to send out for recycling by a particular vendor, whose capabilities for recycling vary (by process and

equipment resources). As will be apparent to those of skill in the art, a particular recycling vendor may have the capability to handle materials at a gross level, giving rise to a lesser complexity factor in the demanufacturing process, while another vendor may not have that capability and will only accept materials which have been broken down to a more discrete level, giving rise to a greater complexity factor in the demanufacturing process.

This explanation of "complexity" is taught by applicants, as follows:

> "Anticipated equipment volumes can include such information as the type and number of units of equipment to be dismantled. When equipment of a certain type is received, experienced dismantlers disassemble at least one of that type to determine an equipment complexity factor in a process known as disassembly prototyping. Easily disassembled equipment types will have a relatively lower complexity factor, and equipment types that are difficult to disassemble will have a higher complexity factor. Salvageable and disposable content for a given equipment type will also be determined during disassembly prototyping. Higher

salvageable content will indicate a higher complexity factor as care must be taken not to damage salvageable components during disassembly. Additional time must also be taken to properly store salvageable components rather than simply disposing of them. All of this information is then entered into a workload planning model, which calculates a workload forecast. Staffing requirements, with regard to both hiring and resource balancing between projects, can then be based on this forecast." [Specification, page 5, line 11 ff.]

Further, as those of skill in the art will recognize, complexity is related to actual person hours and truck load weight by the following described, and precisely stated relationships (actual person hours for a give customer/weight being defined after initial profiling by experience).

"An exemplary embodiment of the invention converts truck loads to pounds, and applies a complexity factor to generate person hours. Conversion of volume measure (pounds, truckload, machine, or pallet, etc.) to persons hours is accomplished by generating a profile for the customer based initially on prototype

dismantling and thereafter as modified by experience, or actual history of hours/volume measure." [Specification, page 11, lines 11-18.]

(Herein is support in the specification for the amendment made to the independent claims 1, 14, 19, and 32 regarding modifying the complexity factor by experience.)

The Examiner finds the claim 5 step of determining salvageable and disposable content as subjective. Applicants traverse.

As previously noted, what is salvageable and disposable depends upon the capabilities of the recycling vendor, and as will be apparent to those of skill in the art, for a given vendor those capabilities are known. The copending application, S/N 09/524,366 describes how salvageable and disposable content is determined. See for example, the discussion for determining optimum level of demanufacturing at page 4, lines 14ff and page 10, lines 6-22. In the present application, this concept is described as follows:

"In step 22, the returns from new customers, or new equipment or materials from existing customers, are

evaluated to establish a dismantle complexity factor. In a preferred embodiment of the invention, this is accomplished by systematically dismantling machines as prototypes, identifying the work content and resulting items (saleable items, commodities, trash, etc.) This data may then be input to the machine tear down model described in E. J. Grenchus, Jr. et al. S/N 09/524,366 (supra)." [Specification, page 8, lines 12-20.]

Thus, applicants assert, the invention produces a useful, concrete, and tangible result by determining staffing requirements based upon dismantling prototype machines, identifying work content and resulting items, to determine a complexity factor and productivity targets which are, with applicants teachings, of adequate precision and within the skill of those of ordinary skill in the art.

Applicants note the following relationships, which will be well understood by those of ordinary skill in the art:

(a) Dismantle time (Td) = function (f1) of Dismantle difficulty (D)

$$Td = f1(D), \text{ and}$$

Dismantle difficulty (D) = function (f2) of Dismantle time (Td)

$$D = f2\ (Td)$$

(b) Complexity factor (C) = function (f3) of Dismantle Time (Td)

$$C = f3\ (Td)$$

(c) Complexity factor for simple dismantle (Cs) < Complexity factor for difficult dismantle (Cd)

$$Cs < Cd$$

However, even more important than the above well understood relationships, is the following precise, exact, and absolutely definite definition of complexity factor:

(d) Person hours (H) = Complexity factor example (Ce) * volume (V),

$$Ce = H/V$$

where V is, for example, pounds, truckload, machine, or pallet.

Thus, complexity factor (Ce) is precisely defined by the algorithm Ce = H/V, and is described in applicant's specification as follows:

"An exemplary embodiment of the invention converts truck loads to pounds, and applies a complexity factor {that is, Ce} to generate person hours. Conversion of volume measure (pounds, truckload, machine, or pallet, etc.) to persons hours is accomplished by generating a profile for the customer based initially on prototype dismantling and thereafter as modified by experience, or actual history of hours {that is, H} / volume {that is, V} measure." [Specification, page 11, lines 11-18. Emphasis added, and material in brackets {} added to relate to the text to the above formula statement Ce = H/V.]

In the Response to Arguments section, the Examiner raises the following objection:

"Examiner points out that it is not clear from the specification if this was the intended definition of complexity factor when the application was filed."

Applicants traverse on this point. The above material quoted from the specification at page 11, lines 11-18 clearly states that the complexity factor relates truck pounds (this is volume) to person hours (which is time.)

Thus, Applicants respectfully traverse the Examiners characterization of the specification as not supporting the time element of complexity, nor providing a definition of complexity factor. These are both clearly supported by the material quoted above from the specification at page 11, lines 11ff, and by the following statement:

"Higher salvageable content will indicate a higher complexity factor as care must be taken not to damage salvageable components during disassembly. Additional time must also be taken to properly store salvageable components..." [Specification, page 6, line 6.]

In Response to Arguments [Office Action, page 2] the Examiner asserts that "There is mention of time on these

pages [pages 5 and 6], but time is only in reference to the time that must be taken to properly store the salvageable components, not to the time it takes to dismantle equipment."

Applicants traverse. The reference to "additional time must also be taken..." clearly indicates that disassembly is a function of time, and certainly such is well understood by those of ordinary skill in the art. As previously stated, the material at page 11 (quoted above) further supports this interpretation.

Applicants now argue that applicants have described in the specification and presented the claims in such a manner as to provide specific "guidelines or criteria" for determining a complexity factor which is both "useful and concrete."

Typically, recyclers think of their operational capacity in weight (pounds or kilograms). For example, they might advertise that they processed 36 million pounds last year, or that they can handle up to 3 million pounds per month.

Customers who return machines for recycling identify recycling input as quantity of machines to be delivered or returned. In some cases they may have the expertise to quantify or clump generic products. For instance, they can count how many laptops or monitors or printers they plan to return.

It is also well known that within in generic product set, weight can vary from machine type to machine type, or model to model based on features, options, etc.

Therefore, the recycler's problem addressed by the present invention is how to project staff or plan workload when a customer identifies a quantity of generic machines that will be delivered for demanufacturing when the recycler measures throughput as weight processed / unit time) and the input is in number of machines.

The solution proposed by the present invention is to determine weight processed per hour as related by complexity factor. This is done, as previously described in the material quoted from the specification, by averaging the weight and disassembly times for a sample of machines within each generic product set and from that determine a factor

(average weight / average disassembly time) for each generic product set. With that factor known, and updated with experience, when a customer identifies a delivery of a given number of a certain machine type, the person hours required for demanufacturing can be determined using the principles set forth in Applicant's specification as previously described.

Description of Salvageable and Disposable Content

The Examiner asserts [Office action, page 4] with respect to claim 8 that determining salvageable and disposable content is subjective, and requires that there needs to be concrete guidelines in place for determining salvageable and disposable content.

Applicants specification refers to this as follows:

"Salvageable and disposable content for a given equipment type will also be determined during disassembly prototyping." [Specification, page 5.]

"In step 22, the returns from new customers, or new equipment or materials from existing customers, are evaluated to establish a dismantle complexity factor. In a preferred embodiment of the invention, this is accomplished by systematically dismantling machines as prototypes, identifying the work content and resulting items (saleable items, commodities, trash, etc.) This data may then be input to the machine tear down model described in E. J. Grenchus, Jr. et al. S/N 09/524,366 (supra)." [Specification, page 8, lines 12ff.]

Copending application S/N 09/524,366, now U.S. Patent 7,054,824, describes the machine tear down model for determining salvageable and disposable content for the optimal level of demanufacturing. [See Grenches et al. U.S. Patent 7,054,824, column 5, incorporated herein at page 1, line 9 of the present application.]

The Examiner asserts "that the patent [Grenches et al.] includes no explanation of how one of ordinary skill in the art determines what is salvageable or disposable." [Office Action, page 3.]

Applicants traverse, and call to the attention of the

Examiner the following material from the Grenches et al. patent:

> "The remaining product is then typically separated into basic materials such as plastics, precious metals, copper, steel, glass etc, to be sold for their commodity value." [Grenches, et al., Col. 1, lines 47-50.]

> "Commodity recovery is used throughout industry in order to separate products into unique materials such as steel, aluminum, copper, precious metals, and various plastics." [Grenches, et al., Col. 3, lines 56-58.]

> "Such logical decisions can be easily made by experience[d] individuals based on the characteristics of each individual product type..." [Grenches, et al., Col. 4, lines 63-65.]

These teachings of the Grenches, et al patent refer to what "experienced individuals" "typically" do in the salvage process. As those of ordinary skill in the art will readily understand, the determination of salvageable content is well

within the skill of the art.

By way of further support for Applicant's assertion that the determination of salvageable content is within the skill of the art, Applicants call to the attention of the Examiner five references cited in the accompanying Information Disclosure Statement as representing knowledge of those of ordinary skill in the art at the time of the filing of the present application:

CA SODHI, MANBIR S. AND WINSTON A. KNIGHT. "MODELS AND TOOLS FOR END-OF-LIFE PRODUCT MANAGEMENT," *The Demanufacturing of Electronic Equipment, October 29-31, 1997, Volume 1.* Conference Coordinated by: Florida Educational Seminars, Inc. Boca Raton, Florida. 1-9.

CB MAHONEY, JOSEPH P. "THE RISKS AND REWARDS OF ELECTRONICS RECYCLING NEEDS/BENEFITS ANALYSIS FOR OEM's AND ELECTORNICS RECYCLING COMPANIES," *The Demanufacturing of Electronic Equipment, October 28-30, 1998, Volume 2.* Conference Coordinated by Florida Educational Seminars, Inc. Boca Raton, Florida. 1-4.

CC LIMAYE, KETAN AND REGGIE J. CAUDILL. " SYSTEM SIMULATION AND MODELING OF ELECTRONICS DEMANUFACTURING FACILITIES," *IEEE International Symposium on Electronics & the Environment, Danvers, Massachusetts, May 11-13, 1999.* 238-243.

CD DAS, SANCHOY K. AND SHIBU MATTHEW. "CHARACTERIZATION OF MATERIAL OUTPUTS FROM AN ELECTRONICS DEMANUFACTURING FACILITY," *IEEE International Symposium on Electronics & the Environment, Danvers, Massachusetts, May 11-13, 1999.* 251-256.

CE VEERAKAMOLMAL, PITIPONG AND SURENDRA M. GUPTA. "A COMBINATORIAL COST-BENEFIT ANALYSIS METHODOLOGY FOR DESIGNING MODULAR ELECTRONIC PRODUCTS FOR THE ENVIRONMENT." *IEEE International Symposium on Electronics & the Environment, Danvers, Massachusetts, May 11-13, 1999.* 268-273.

Sodhi et al. (Ref. CA), at pages 2, 5, and 8, refers to criteria or factors used in determining salvageable content.

Mahoney et al. (Ref. CB), at pages 2 and 4 (Table I) identifies what is salvageable.

Limaye et al. (Ref. CC), at page 240 refers to salvageable materials as metals, glass and plastics.

Das et al. (Ref. CD), at page 252 notes that an experienced worker will utilize his experience coupled with visual observation to sort the materials (that is, determine what is salvageable), and at page 253 defines output materials (that is, salvageable materials), in Table I lists

common bins of such materials in an electronics demanufacturing facility (EDF), and at pages 254-256 defines a list of standardized output bins on the basis of industrial observations.

As will be apparent to those of ordinary skill in the art, and as described in the above five references in addition to the Grenches et al. patent, the determination of salvageable content was well known at the time of the filing of the present application.

35 U.S.C. 112

Claims 1, 3-15, and 19-32 have been rejected under 35 U.S.C. 112, first paragraph, as not enabling.

In the context of this rejection, the Examiner again refers to the determination of the complexity factor and the determination of salvageable and disposable content. Applicants discussion above with respect to these

determinations in the context of the rejection under 35 U.S.C. 101 also applies here.

Guidelines for determining salvageable and disposable content is provided by reference to U.S. Patent 7,054,824 where the material content which should be salvaged and which should be disposed of is described at Column 5. To those of ordinary skill in the art, as previously described with respect to Applicant's specification, the Grenches et al. patent, and the five references CA-CE, the determination of what is salvageable is not "completely subjective", but well defined in terms of materials and remanufacturer capability. Applicants invention relates to the determination of demanufacturing staffing requirements, and how that is defined as a function of complexity factors and salvageable content through prototyping and experience as set forth in Applicant's specification will be, Applicants assert, well understood by those of ordinary skill in the art.

Claims 1, 3-15, and 19-32 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

In the context of this rejection, the Examiner again

refers to the determination of the complexity factor and the determination of salvageable and disposable content. Applicants discussion above with respect to these determinations in the context of the rejection under 35 U.S.C. 101 also applies here.

Guidelines for determining salvageable and disposable content is provided by reference to U.S. Patent 7,054,824 and the knowledge well known in the art as represented by the above listed references CA-CE, where the material content which should be salvaged and which should be disposed of is described.

SUMMARY AND CONCLUSION

Applicants urge that the above amendments be entered and the case passed to issue with claims 1, 3-15, 19-32.

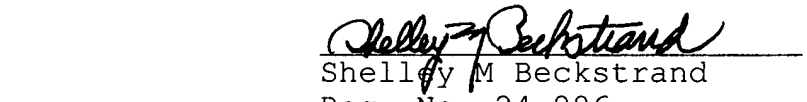
The Application is believed to be in condition for allowance and such action by the Examiner is urged. Should differences remain, however, which do not place one/more of

the remaining claims in condition for allowance, the Examiner is requested to phone the undersigned at the number provided below for the purpose of providing constructive assistance and suggestions in order that allowable claims can be presented, thereby placing the Application in condition for allowance without further proceedings being necessary.

Sincerely,

Edward J.Grenchus, Jr. et al.

By



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